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JAN 24 2003

TECH. CENTER 1600/2900

5'	9	18	27	36	45	54
GCC CGA GCA CGC CGC GGA GCC CGG ACC TCC CTC GGA CGC TCT GCC CCG GCC ATG						M
63	72	81	90	99	108	
GCG TCG CTG CTG CCA CTG CTC TGT CTC TGT GTC GTC GCT GCG CAC CTG GCG GCG						
A S L L P L L C L C V V A A H L A G						
117	126	135	144	153	162	
GCC CGA GAC GCC ACC CCC ACC GAG CCA ATG GCG ACT GCA CTG GGC CTG GAA						
A R D A T P T E E P M A T A L G L E						
171	180	189	198	207	216	
AGA CGG TCC GTG TAC ACC GGC CAG CCC TCA CCA GCC CTG GAG GAC TGG GAA GAG						
R R S V Y T G Q P S P A L E D W E E						
225	234	243	252	261	270	
GCC AGC GAG TGG ACG TCC TGG TTC AAC GTG GAC CAC CCC GGA GGC GAC GGC GAC						
A S E W T S W F N V D H P G D G D						
279	288	297	306	315	324	
TTC GAG AGC CTG GCT GCC ATC CGC TTC TAC TAC GGG CCA GCG CGC GTG TGC CCG						
F E S L A A I R F Y Y G P A R V C P						
333	342	351	360	369	378	
CGA CCG CTG GCG CTG GAG GCG CGC ACC ACG GAC TGG GCC CTG TCC GCC GTC						
R P L A L E A R T T D W A L P S A V						

FIGURE 1A



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387	396	405	414	423	432
GGC GAG CGC GTG CAC TTG AAC CCC ACG CGC GGC TTC TGC TGG TGC CTC AAC CGC GAG					
G E R V H L N P T R G F W C L N R E					
441	450	459	468	477	486
CAA CCG CGT GGC CGC CGC TGC TCC AAC TAC CAC GTG CGC TTC CGC TGC CCA CTA					
Q P R G R R C S N Y H V R F R C P L					
495	504	513	522	531	540
GAA GCC TCG TGG GGC GCG TGG GGC CCG TGG GGT CCC TGC TCG GGC AGC TGT GGG					
E A S W G A W G P W G P C S G S C G					
549	558	567	576	585	594
CCA GGC CGT CGC TTG CGC CGC CGC CAC TGC CCA AGC CCC GCT GGC GAT GCG TGT					
P G R R L R R R H C P S P A G D A C					
603	612	621	630	639	648
CCC GGG CGT CCT CTG GAG GCG CAG AAG TGC GTG CGG CCT CGG TGT CCA GGC TGC					
P G R P L E A Q K C V R R P R C P G C					
657	666	675	684	693	702
AGC CTT GAC ACC TGT GAA TGC CCG GAC CAC ATC CTC CTG GGC TCG GTG GTC ACC					
S L D T C E C P D H I L L G S V V T					
711	720	729	738	747	756
CCA TCT GGG CAA CCA CTG CTA GGA GCC AGG GTC TCC CTG CGA GAC CAG CCT GGC					
P S G Q P L L G A R V S L R D Q P G					

FIGURE 1B

JAN 2 2 2003

Docket No.: PF-0420-2 DIV

Inventors: Magna et al.

Title: HUMAN NUCLEOTIDE PYROPHOSPHOHYDROLASE-2

Serial No.: 09/757,716

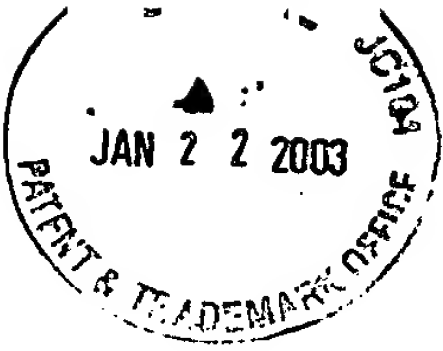
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765	774	783	792	801	810
ACT GTG GCC ACC AGC GAT GCT CAC GGA ACC TTC CGG GTG CCT GGT GTC TGT GCT					
T V A T S D A H G T F R V P G V C A					
819	828	837	846	855	864
GAC AGC CGC GCC AAC ATC AGG GCC CAG ATG GAT GGC TTC TCT GCA GGG GAG GCC					
D S R A N I R A Q M D G F S A G E A					
873	882	891	900	909	918
CAG GCC CAG GCC AAC GGA TCC ATC TCT GTG GTC ACC ATC ATC CTT GAT AAG TTG					
Q A Q A N G S I S V V T I I L D K L					
927	936	945	954	963	972
GAG AAG CCG TAC CTG GTG AAA CAC CCT GAG TCC CGA GTG CGA GAG GCT GGC CAG					
E K P Y L V K H P E S R V R E A G Q					
981	990	999	1008	1017	1026
AAT GTG ACT TTC TGC TGC AAA GCC TCC TCC GGG ACC CCC ATG CCC AAG AAA TAC TCC					
N V T F C C K A S G G T P M P K K Y S					
1035	1044	1053	1062	1071	1080
TGG TTC CAC AAT GGG ACC CTG CTG GAC AGG CGA GCT CAT GGG TAC GGG GCC CAC					
W F H N G T L L L D R R A H G Y G A H					
1089	1098	1107	1116	1125	1134
CTG GAG CTS CGG GGA CTG CGC CCA GAC CAG GCT GGC ATC TAC CAC TGC AAG GCA					
L E L R G L R P D Q A G I Y H C K A					

FIGURE 1C



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1143	1152	1161	1170	1179	1188
TGG AAT GAG GCG GGT GCC GTG CGC TCG GGC ACT GCC CGG CTC ACT GTA CTT GCC					
W N E A G A V R S G T A R L T V L A					
1197	1206	1215	1224	1233	1242
CCA GGC CAG CCA GCC TGC GAC CCC CGG CCC CGA GAG TAC CTG ATC AAG CTC CCT					
P G Q P A C D P R P R E Y L I K L P					
1251	1260	1269	1278	1287	1296
GAG GAC TGT GGT CAG CCA GGT AGT GGC CCT GCC TAC CTG GAT GTG GGC CTC TGT					
E D C G Q P G S G P A Y L D V G L C					
1305	1314	1323	1332	1341	1350
CCC GAC ACC CGC TGC CCC AGC CTG GCA GGC TCC AGC CCC CGC TGC GGC GGC GAC GCC					
P D T R C P S L A G S S P R C G D A					
1359	1368	1377	1386	1395	1404
AGC TCC CGC TGC TCT GTG CGC CGT CTG GAG AGA AGG GAG ATT CAC TGC CCT					
S S R C C S V R R L E R R E I H C P					
1413	1422	1431	1440	1449	1458
GGC TAC GTC CTC CCA GTG AAG GTG GTC GCA GAG TGT GGC TGC CAG AAG TGT CTG					
G Y V L P V K V V A E C G C Q K C L					
1467	1476	1485	1494	1503	1512
CCC CCT CGG GGC CTG GTC CGG GGC CGT GTT GTG GCT GCT GAC TCC GGC GAG CCG					
P P R G L V R G R V V A A D S G E P					

FIGURE 1D

PATENT  
JAN 22 2003  
50184

1521	CTA CGC TTC GCC AGG ATT CTG CTG GGC CAG GAG CCC ATC GGC TTC ACC GCC TAC	1530	1539	1548	1557	1566
	L R F A R I L L G Q E P I G F T A Y					
1575	CAG GGC GAC TTT ACC ATT GAG GTG CCG CCC TCC ACC CAG CGG CTG GTG GTG ACT	1584	1593	1602	1611	1620
	Q G D F T I E V P P S T Q R L V V T					
1629	TTT GTG GAC CCC AGC GGT GAG TTC ATG GAC GCT GTC CGG GTC TTG CCT TTT GAT	1638	1647	1656	1665	1674
	F V D P S G E E F M D A V R V L P F D					
1683	CCT CGA GGT GCC GGC GTG TAC CAC GAG GTC AAG GCC ATG CGG AAG AAA GCC CCG	1692	1701	1710	1719	1728
	P R G A G V Y H E V K A M R K K A P					
1737	GTC ATT TTA CAT ACC AGC CAG AGC AAC ACG ATC CCC CTG GGC GAG CTG GAA GAT	1746	1755	1764	1773	1782
	V I L H T S Q S N T I P L G E L E D					
1791	GAG GCG CCC CTG GGC GAG CTG GTC CCT TCT GGC GCT TTC CGC AGA GCC GAC	1800	1809	1818	1827	1836
	E A P L G E L V L P S G A F R A D					
1845	GGC AAA CCC TAC TCG GGG CCT GTG GAG GCC CGG GTG ACG TTC GTG GAC CCC CGA	1854	1863	1872	1881	1890
	G K P Y S G P V E A R V T F V D P R					

FIGURE 1E



1899	1908	1917	1926	1935	1944
GAC CTC ACC TCG GCG GCG TCT GCC CCC AGT GAC CTG CGC TTC GTG GAC AGC GAC					
D L T S A A S A P S D L R F V D S D					
1953	1962	1971	1980	1989	1998
GGC GAG CTG GCT CCA CTG CCG ACC TAC GGC ATG TTC TCC GTG GAC CTC CGT GCG					
G E L A P L R T Y G M F S V D L R A					
2007	2016	2025	2034	2043	2052
CCC GGC TCC GCG GAG CAG CTG CAG GTG GGG CCG GTG GCC GTG CGG GTG GCC GCC					
P G S A E Q L Q V G P V A V R V A A					
2061	2070	2079	2088	2097	2106
AGC CAG ATC CAC ATG CCA GGC CAC GTG GAG GCC CTC AAG CTG TGG TCG CTG AAC					
S Q I H M P G G H V E A L K L W S L N					
2115	2124	2133	2142	2151	2160
CCC GAG ACC GGC TTG TGG GAG GAG GAG AGC GGC TTC CGG CGC GAG GGG TCC TCG					
P E T G L W E E E S G F R R E G S S					
2169	2178	2187	2196	2205	2214
GGC CCC CGG GTG CGC CGG GAG GAG GAG GTC TTC CTG GTG GGC AAC GTG GAG ATC					
G P R V R R E E E R V F L V G N V E I					
2223	2232	2241	2250	2259	2268
CGG GAG CGG CTG TTC AAT CTG GAC GTG CCT GAG CGC CGC CGC TGC TTC GTG					
R E R R L F N L D V P E R R R C F V					

FIGURE 1F



2277	2286	2295	2304	2313	2322
AAG GTG CGC GCC TAC GCC AAC GAC AAG TTC ACC CCC AGC GAG CAG GTG GAG GGC					
K V R A Y A N D K F T P S E Q V E G					
2331	2340	2349	2358	2367	2376
GTG GTG GTC ACG CTG GTC AAT CTG GAG CCC GGC CCC GGC TTC TCC GCC AAC CCC					
V V V T L V N L E P A P G F S A N P					
2385	2394	2403	2412	2421	2430
CGT GCC TGG GGC CGC TTT GAC AGC GCG GTC ACC GGC CCC AAT GGC GCC TGC CTC					
R A W G R F D S A V T G P N G A C L					
2439	2448	2457	2466	2475	2484
CCC GCC TTC TGC GAC GCC GAC AGG CCA GAC GCC TAC ACC GCC CTG GTC ACC GCC					
P A F C D A D R P D A Y T A L V T A					
2493	2502	2511	2520	2529	2538
ACC CTG GGC GGC GAG GAG CTG GAG CCG GCC CCT TCC TTG CCC CGC CCA CTC CCG					
T L G G E E L E P A P S L P R P L P					
2547	2556	2565	2574	2583	2592
GCC ACC GTG GGC GTC ACC CAG CCC TAC CTG GAC AGG CTG GGG TAC CGT CGG ACG					
A T V G V T Q P Y L D R L G Y R R T					
2601	2610	2619	2628	2637	2646
GAC CAC GAC GAT CCC GCC TTC AAG CGT AAC GGC TTC CGC ATC AAC CTC GCC AAG					
D H D D P A F K R N G F R I N L A K					

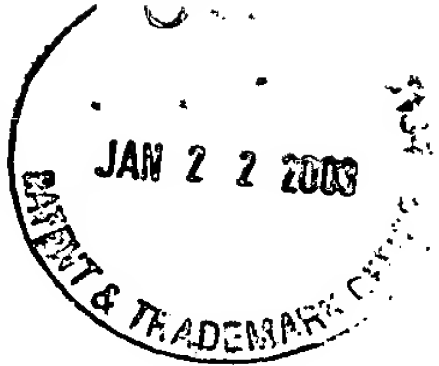
FIGURE 1G



2655	2664	2673	2682	2691	2700
CCC AGG CCA GGT GAC CCC GCC GAG GCC AAT GGG CCT GTG TAC CCG TGG CGC AGC					
P R P G D P A E A N G P V Y P W R S					
2709	2718	2727	2736	2745	2754
CTG CGG GAA TGC CAG GGG GCC CCG GTG ACT GCC AGC CAC TTC CGC TTC GCC AGG					
L R E C Q G A P V T A S H F R A R					
2763	2772	2781	2790	2799	2808
GTG GAG GCG GAC AAG TAC GAG TAC AAC GTG GTC CCC TTC CGA GAG GGC ACA CCT					
V E A D K Y E Y N V V P F R E G T P					
2817	2826	2835	2844	2853	2862
GCC TCC TGG ACT GGC GAT CTC CTG GCC TGG TGG CCC AAC CCG CAG GAG TTC CGG					
A S W T G G D L L A W W P N P Q E F R					
2871	2880	2889	2898	2907	2916
GCC TGC TTC CTC AAG GTG AAG ATC CAG GGT CCC CAG GAG TAT ATG GTC CGC TCC					
A C F L K V K I Q G P Q E Y M V R S					
2925	2934	2943	2952	2961	2970
CAC AAC GCA GGG GGC AGC CAC CCA CGC ACC CGC GGC CAG CTC TAC GGA CTT CGG					
H N A G G S H P R T R G Q L Y G L R					
2979	2988	2997	3006	3015	3024
GAT GCC CGG AGT GTG CGA GAC CCC GAG CGT CCG GGC ACC TCG GCA GCC TGC GTG					
D A R S V R D P E R P G T S A A C V					

FIGURE 1H





3033	3042	3051	3060	3069	3078
GAG TTC AAG TGC AGC GGG ATG CTG TTC GAC CAG CGG CAG GTG GAC AGG ACG CTG					
E F K C S G M L F D Q R Q V D R T L					
3087	3096	3105	3114	3123	3132
GTG ACC ATT ATG CCC CAG GGC AGC TGC CGG CGC GTG GCC GTC AAC GGA CTC CTT					
V T I M P Q G S C R R V A V N G L L					
3141	3150	3159	3168	3177	3186
CGG GAT TAC CTG ACC CGG CAC CCC CCA CCG GTG CCC GCG GAG GAC CCA GCT GCC					
R D Y L T R H P P P V P A E D P A A					
3195	3204	3213	3222	3231	3240
TTC TCC ATG CTG GCC CCC CTA GAC CCT CTG GGC CAC AAC TAT GGC GTC TAC ACT					
F S M L A P L D P L G H N Y G V Y T					
3249	3258	3267	3276	3285	3294
GTC ACT GAC CAG AGC CCA CGC TTG GCC AAG GAG ATC GCC ATT GGC CGC TGC TTT					
V T D Q S P R L A K E I A I G R C F					
3303	3312	3321	3330	3339	3348
GAT GGT TCC TCT GAC GGY TTC TCC AGA GAG ATG AAG GCT GAT GCC GGC ACA GCC					
D G S S D G F S R E M K A D A G T A					
3357	3366	3375	3384	3393	3402
GTC ACC TTC CAG TGC CGG GAG CCA CCG GCC GGA CGA CCC AGC CTC TTC CAG AGG					
V T F Q C R E P P A G R P S L F Q R					

FIGURE II



3411	3420	3429	3438	3447	3456
CTG CTG GAG TCC CCG GCG ACA GCA CTT GGT GAC ATC CGC AGG GAG ATG AGC GAG					
L L E S P A T A L G D I R R E M S E					
3465	3474	3483	3492	3501	3510
GCG GCG CAG GCA CAG GCC CGG GCC TCA GGT CCC CTC CGC ACC CGC CGG GGT AGG					
A A Q A Q A R A S G P L R R G R					
3519	3528	3537	3546	3555	3564
GTC CGG CAG TGA CCT GGG CAG GGG CCT CGC TTT CCC ACC TCC CTC CAG ACT CCT					
V R Q					
3573	3582	3591	3600	3609	3618
TTG ACC CCA GGA AGT TTT GCC CCT CCT TCT TCT CCA GAC AGC CCC CTC CCC AGG					
3627	3636	3645	3654	3663	3672
TGT CTG GGT CCC CTT TCC CGC CCC TTT CCA GAA CTC AGA GTC AGA CAA GAA CCC					
3681	3690	3699	3708	3717	3726
AGA GCA TCC GAT GGT AGA AAC ACC AGG AAG ACA ATT GTT GCT GTG TGG TAT GGA					
3735	3744	3753	3762	3771	3780
ATG GAG TTT GCG GTG ACT CTG GGG CCA GCA CCC AGG GGA CGA CGT TCA ACC CTA					
3789	3798	3807	3816	3825	3834
GCC TGA AGG GAC CCG CTC CCA GCT CAG AAG CCG TCT CTG ACT TCT CGT GCG TAT					

FIGURE 1J



3843	3852	3861	3870	3879	3888
TTT GAC CCT GAT TTC AAT CTT CTA CCC TTG GGA GTT CTG GCG TTT GGC ACA AAG					
3897	3906	3915	3924	3933	3942
TCC CCT CTG CCT GTT TGG AGC TCA GTG CTA GAC CAG GTC CCC TGC CCC GAG CTT					
3951	3960	3969	3978	3987	3996
TGT TTT TGG GGT TAT TTA TTG AAA CAA AGT GTG GGG AGC TGG TTG TGG GTG TGA					
4005	4014	4023	4032	4041	4050
GTG GGG GTG TGG GGT CCA GGC TGG GCC CAG TGA AAA GGA GGA AGG GGT TCC CAT					
V G V W G P G W A Q					
4059	4068	4077	4086	4095	4104
GCG GGG GAG GCT CTG GGG CTG AGG GGA ACA ATT CTC ACG TGT TTG GTG CTT AGA					
4113	4122	4131	4140	4149	4158
GAC CTG CCC GGG GCG TTG GGC AGG CCC TCC GGG GGC TGA ATT AAA AAT GCT TTA					
4167	4176				
TTT CCA AAA AAA AAA AAA NAA A 3'					

FIGURE 1K

JAN 22 2003

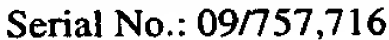
[illegible]

FIGURE 2A



376	T	V	L	A	P	G	O	P	A	C	D	P	R	P	R	E	Y	L	I	K	L	P	E	D	C	G	Q	P	G	S	G	P	A	Y	L	D	V	G	L	C	NTPPH-2
393	I	V	I	A	S	D	E	T	P	C	N	P	V	P	E	S	Y	L	I	R	L	P	H	D	C	F	O	N	A	T	N	S	F	Y	Y	D	V	G	R	C	NTPPH-1
416	P	D	T	R	C	P	S	L	A	G	S	S	P	R	C	G	D	A	S	S	R	C	C	S	V	R	R	L	E	R	R	E	I	H	C	P	G	Y	V	L	NTPPH-2
433	P	V	K	T	C	A	G	Q	Q	D	N	G	I	R	C	R	D	A	V	Q	N	C	C	G	I	S	K	T	E	R	E	I	Q	C	S	G	Y	T	L	NTPPH-1	
456	P	V	K	V	V	A	E	C	G	C	Q	K	C	L	P	P	R	G	L	V	R	G	R	V	V	A	A	D	S	G	E	P	L	R	F	A	R	I	L	L	NTPPH-2
473	P	T	K	V	A	K	E	C	S	C	Q	R	C	T	E	T	R	S	I	V	R	G	R	V	S	A	A	D	N	G	E	P	M	R	F	G	H	V	Y	M	NTPPH-1
496	G	O	E	P	I	G	F	T	A	Y	Q	G	D	F	T	I	E	V	P	P	S	T	Q	R	L	V	V	T	F	V	D	P	S	G	E	F	M	D	A	V	NTPPH-2
513	G	N	S	R	V	S	M	T	G	Y	K	G	T	F	T	L	H	V	P	Q	D	T	E	R	L	V	L	T	F	V	D	R	L	Q	K	E	F	V	N	T	NTPPH-1
536	R	V	L	P	F	D	P	R	G	A	G	V	Y	H	E	V	K	A	M	R	K	K	A	P	V	I	L	H	T	S	Q	S	N	T	I	P	L	G	E	L	NTPPH-2
553	K	V	L	P	F	N	K	K	G	S	A	V	F	H	E	I	K	M	L	C	R	K	E	P	I	T	L	E	A	M	E	T	N	I	I	P	L	G	E	V	NTPPH-1
576	E	D	E	A	P	L	G	E	L	V	L	P	S	G	A	F	R	R	A	D	G	K	P	Y	S	G	P	V	E	A	R	V	T	F	V	D	P	R	D	L	NTPPH-2
593	V	G	E	D	P	M	A	E	L	E	I	P	S	R	S	F	Y	R	Q	N	G	E	P	Y	I	G	K	V	K	A	S	V	T	F	L	D	P	R	N	I	NTPPH-1
616	T	S	A	A	S	A	P	S	D	L	R	F	V	D	S	D	G	E	L	A	P	L	R	T	Y	G	M	F	S	V	D	L	R	A	P	G	S	A	E	Q	NTPPH-2
633	S	T	A	A	Q	T	D	L	N	F	I	N	D	E	G	D	T	F	P	L	R	T	Y	G	M	F	S	V	D	F	R	D	E	V	T	S	E	P	NTPPH-1		
656	L	O	V	G	P	V	A	V	R	V	A	A	S	Q	I	H	M	P	G	H	V	E	A	L	K	L	W	S	L	N	P	E	T	G	L	W	E	E	S	NTPPH-2	
673	L	N	A	G	K	V	K	V	H	L	D	S	T	Q	V	K	M	P	E	H	I	S	T	V	K	L	W	S	L	N	P	D	T	G	L	W	E	E	G	NTPPH-1	
696	G	F	R	R	E	G	S	S	G	P	R	V	R	R	E	E	R	V	F	L	V	G	N	V	E	I	R	E	R	R	L	F	N	L	D	V	P	E	R	NTPPH-2	
713	D	F	K	F	E	-	-	N	Q	R	R	N	K	R	E	D	R	T	F	L	V	G	N	L	E	I	R	E	R	R	L	F	N	L	D	V	P	E	S	R	NTPPH-1
736	R	C	F	V	K	V	R	A	Y	A	N	D	K	F	T	P	S	E	Q	V	E	G	V	V	T	L	V	N	L	E	P	A	P	G	F	S	A	N	P	NTPPH-2	
751	R	C	F	V	K	V	R	A	Y	R	S	E	R	F	L	P	S	E	Q	I	Q	G	V	V	I	S	V	I	N	L	E	P	R	T	G	F	L	S	N	P	NTPPH-1

FIGURE 2B



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1131  - - R E M S E A A Q A Q A R A S G P L - - - - R T R R G R V R Q
1151  P S R R Q Q R A S R G G Q R Q S G V V A S L R F P R V A Q Q P L I N

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**FIGURE 2C**





Docket No.: PF-0420-2 DIV  
Inventors: Magna et al.  
Title: HUMAN NUCLEOTIDE PYROPHOSPHOHYDROLASE-2  
Serial No.: 09/757,716

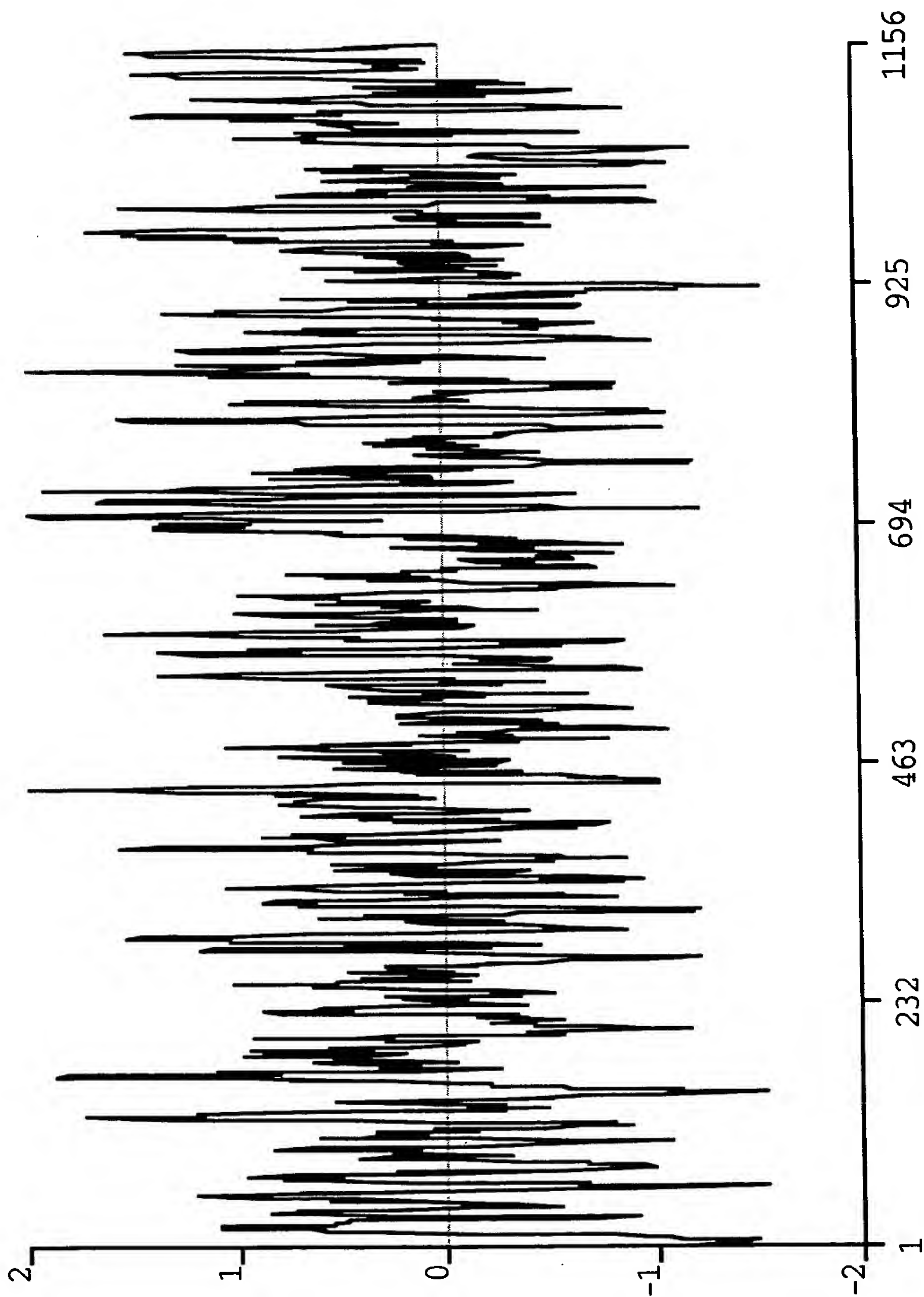


FIGURE 3A



Docket No.: PF-0420-2 DIV  
Inventors: Magna et al.  
Title: HUMAN NUCLEOTIDE PYROPHOSPHOHYDROLASE-2  
Serial No.: 09/757,716

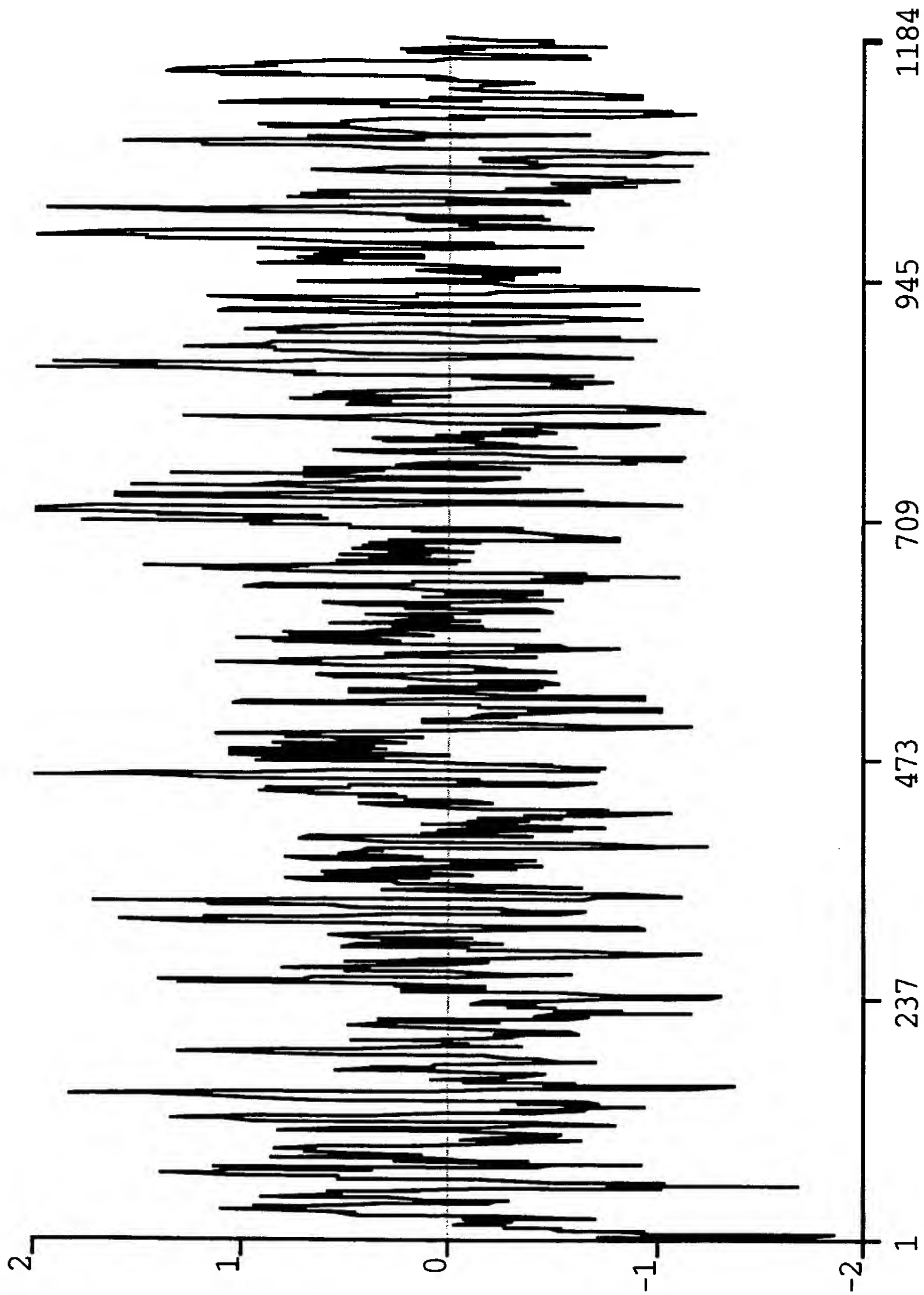


FIGURE 3B